

Application No: 10/692,389

REMARKS

Claims 1-26 are pending. Claims 15-22 are withdrawn. By this Amendment, Claims 1, 4, 8, 11, 23, and 26 are amended. Claims 1, 8, and 23 are amended to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 4, 11, and 26 are amended to add the conjunction "and" between the last two elements of the Markush group in each of claims 4, 11, and 26. The amendment of claims 4, 11, and 26 is not intended to limit the scope of the claims. Claims 1-14 and 23-26 stand rejected. Applicant respectfully requests reconsideration of the pending rejections based on the following comments.

Affirmation of Election

Applicant affirms the election of Group 1, claims 1-14 and 12-26 with traverse. Claims 15-22 have been withdrawn from further consideration by the Examiner.

Abstract Objection

The abstract of the disclosure was objected to because it was not limited to a single paragraph. The second paragraph of the abstract is deleted, as shown in the Amendment to the Specification section. After the amendment, only one single paragraph remains in the abstract section.

In view of the above comments, Applicants respectfully request withdrawal of the objection to the abstract of the disclosure.

Disclosure Informality Objections

The disclosure was objected to because the trademarks and registered marks at pages 10-12 were not capitalized. All the trademarks and registered marks at pages 10-12 are labeled as such and capitalized, as shown in the Amendment to the Specification section.

In view of the above comments, Applicants respectfully request withdrawal of the objection to the disclosure.

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Improper Antecedent Basis Objection

The specification was objected to as failing to provide proper antecedent basis for the claimed subject matter. The Examiner indicated that the recitation "X is a OCH₂ group" in claims 2, 9, and 24 and the recitation "R₁, R₂, R₃, and R₄ are, independently, an aryl group" in claims 3, 10, and 25 lack antecedent basis in the specification. The paragraph at page 4, lines 1-2 in the Summary of the Invention section is amended as follows:

In a fourth aspect, the invention features a charge transport material having the general formula above. In some embodiments of interest, X of the general formula above is a linking group having the formula -(CH₂)₂- and one of the methylene groups is replaced by O, i.e., a OCH₂ group. In other embodiments of interest, R₁, R₂, R₃, and R₄ are, independently, an aryl group.

The amendment is supported by claims 2, 3, 9, 10, 24, and 25 and by the specification, for example, Compound (2) and Compound (3) at page 20, lines 9-10, and the paragraph at page 2, line 22 to page 3, line 12. After the amendment, the specification provides proper antecedent basis for the recitation "X is a OCH₂ group" in claims 2, 9, and 24 and the recitation "R₁, R₂, R₃, and R₄ are, independently, an aryl group" in claims 3, 10, and 25.

In view of the above comments, Applicants respectfully request withdrawal of the objection to the specification.

Claim Rejection under 35 U.S.C. § 112

Claims 1-14 and 23-26 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner asserted that claims 1, 8, and 23 are indefinite in the phrase "Y is an alkyl group, alkaryl group, or aryl group" because alkyl group, alkaryl group, or aryl group is general monovalent whereas Y group is at least trivalent according to the formulae in claims 1, 8, and 23. Claims 1, 8, and 23 are amended such that the phrase "Y is an alkyl group, alkaryl group, or aryl group" is amended to "Y is an alkyl group, alkaryl group, or aryl group, and Y is at least trivalent" so as to particularly point out and distinctly claim the

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subject matter which applicant regards as the invention. The amendment is supported by the specification, for example, at page 3, lines 3-4; at page 8, lines 19-20; at page 20, lines 3-4; and Compounds (2) and (3) at page 20.

The Examiner asserted that claims 4, 11, and 26 are indefinite because the conjunction "and" is missing in the Markush language. Claims 4, 11, and 26 are amended such that the conjunction "and" is properly added between the last two elements of the Markush group in each of claims 4, 11, and 26.

In view of the above comments, Applicants respectfully request withdrawal of the rejection of claims 1-14 and 23-26 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim Rejections under 35 U.S.C. § 102

Claims 23 and 24 were rejected under 35 U.S.C. § 102(b) as being anticipated by Deutsch (U.S. Pat. No. 5,693,309). The Examiner noted that Deutsch discloses the compound 3,6-diaza-3,6-bis(tert-butoxycarbonylmethyl)-4-(4-oxiranylmethoxy)benzylsuberic acid bis(tert-butyl) ester, i.e., example 31 at col. 46 of Deutsch. The Examiner asserted that example 31 of Deutsch is within the compositional limitations of the formula recited in the instant claim 23 when X is $-\text{OCH}_2-$, E is oxiranyl, Y is the "alkaryl group," $-(\text{C}_6\text{H}_4)-\text{CH}_2-\text{CH}-\text{CH}_2-$, and the R groups are each the "alkyl group," $-\text{CH}_2-\text{COO}(\text{tert-butyl})$. Claim 23 is amended such that the "alkaryl group" is deleted from the Y group. After the amendment, example 31 of Deutsch is not within the compositional limitation of the formula recited in instant claim 23 because Y in claim 23 do not include the "alkaryl group." Because claim 24 depends on claim 23, example 31 of Deutsch is also not within the compositional limitation of the formula recited in instant claim 24.

In view of the above comments, Applicants respectfully request withdrawal of the rejection to claims 23 and 24 under 35 U.S.C. § 102(b) as being anticipated by Deutsch (U.S. Pat. No. 5,693,309).

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Claim Rejection under 35 U.S.C. § 103

Claims 23-25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kikuchi (U.S. Pat. No. 6,416,915). The Examiner indicated that (1) Kikuchi discloses the compound 102 at cols. 39-40; (2) the compound 102 comprises three chain-polymerization functional groups $-O-C(O)-CH_2=CH_2$; (3) Kikuchi teaches that the chain-polymerization

functional groups can be equally be $-CH_2OCH_2-\overset{\text{O}}{\triangle}-CH_2-$, i.e., compound 29; and (4) Kikuchi discloses that each of compounds 29 and 102 comprising at least two chain-polymerization functional groups forms a polymerize having improved anti-abrasion and anti-scar characteristics. The Examiner asserted that, in view of the teachings of Kikuchi, it would have been obvious for a person having ordinary skill in the art to substitute the three chain-polymerization functional groups $-O-C(O)-CH_2=CH_2$ in the Kikuchi compound 102 with the

equivalent chain-polymerization functional groups $-CH_2OCH_2-\overset{\text{O}}{\triangle}-CH_2-$. The resulting hole transporting compound meets the compositional limitation of the formula recited in instant claim 23 when X is $-OCH_2-$, E is oxiranyl, Y is the "alkaryl group," $-(C_6H_4)-C(CH_3)(CH_2)(C_6H_4)-$, R_1

and R_2 are each phenyl, and R_1 and R_2 are each the "aryl group," $-C_6H_4-CH_2O-CH_2-\overset{\text{O}}{\triangle}-CH_2-$.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. MPEP 2143.

Claim 23 is amended such that the charge transport material of the currently amended claim 23 comprises only one epoxy group and the Y group of the formula of claim 23 does not include an alkaryl group. Kikuchi teaches charge transport materials comprising at least two chain-polymerization functional groups. See the abstract, the paragraph at col. 3, line 4 to col. 4, line 34; and the paragraph at col. 5, lines 6-11 of Kikuchi. Kikuchi also teaches charge transport materials comprising the "alkaryl group," $-(C_6H_4)-C(CH_3)(CH_2)(C_6H_4)-$. After the

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amendment, the cited reference, Kikuchi, does not teach, suggest, or provide an incentive for the modification of the prior art reference to provide all the limitations, particularly the limitations that the charge transport material of the currently amended claim 23, and thus claims 24 and 25, comprises (1) only one epoxy group; and (2) no alkaryl group. Therefore, the instant claims 23-25 are not obvious under 35 U.S.C. § 103(a) over Kikuchi under 35 U.S.C. § 103(a).

In view of the above comments, Applicants respectfully request withdrawal of the rejection to claims 23-25 under 35 U.S.C. § 103(a) as being unpatentable over Kikuchi (U.S. Pat. No. 6,416,915).

Allowable Subject Matter

Claims 1-14 were indicated allowable if rewritten or amended to overcome the rejection under 35 U.S.C. §112, second paragraph set forth above. Claims 1, 4, 11, and 8 are amended to overcome the rejection under 35 U.S.C. §112, second paragraph set forth above. After the amendment, claims 1-14 are allowable.

Claim 26 was indicated allowable if rewritten or amended to overcome the rejection under 35 U.S.C. §112, second paragraph set forth above and to include all of the limitations of the base claim and any intervening claims. Claim 26 is amended to overcome the rejection under 35 U.S.C. §112, second paragraph set forth above. Claim 26 depends on claim 23. Claim 23 is amended such that it is allowable for the reason mentioned above. After the amendments of claims 23 and 26, the currently amended claim 26 is allowable in its dependent form.

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CONCLUSION

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,



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